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By-Densmore, Clen; Bourne, Charles

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This study was conducted to determine what fraction of the total cost of the Stanford University library system can properly be charged to each of the four major groups of users: undergraduate students, graduate students, faculty and staff, and non-Stanford users. Eight separate cost elements were developed for each of the library's cost centers or service facilities from actual cost data provided by the University Controller's Office. These cost elements were: salaries and benefits, books, periodicals, binding, supplies and expenses, operating and maintenance, building and equipment depreciation, and University administration. Statistics covering circulation by user groups and campus population distribution by user groups were collected for each by the individual facilities, and these circulation and population statistics were then used to make a preliminary allocation of the specified cost elements to the four user groups. Following this preliminary allocation, the manner for allocating the cost elements to user groups was outlined. In order to aid the allocation of cost elements, five special studies were made which covered: circulation, population distribution, the cataloging and acquisition divisions, salaries and benefits, and space utilization. The final task performed was the allocation of cost elements for each facility or cost center to the appropriate user group or groups. (Author/JB)

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A COST ANALYSIS AND UTILIZATION STUDY OF THE STANFORD UNIVERSITY LIBRARY SYSTEM

LI 000983

STANFORD UNIVERSITY LIBRARIES
OFFICE OF THE DIRECTOR
STANFORD, CALIFORNIA

February 1965

Memorandum Report

A COST ANALYSIS AND UTILIZATION STUDY OF THE STANFORD UNIVERSITY LIBRARY SYSTEM

Prepared for:

STANFORD UNIVERSITY
STANFORD, CALIFORNIA

By: GLEN DENSMORE AND CHARLES BOURNE

SRI Project IM-5012

STANFORD UNIVERSITY LIBRARIES

Stanford, California

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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I INTRODUCTION

In May of 1964, Stanford University requested that Stanford Research Institute assist in a cost and utilization study of the Stanford University library system comprising a main library, six autonomous libraries, and several branch or division libraries. The main objective of this study was to determine what fraction of the total cost of the Stanford University library system can properly be charged to each of four major groups of users: undergraduate students, graduate students, faculty and staff, and non-Stanford users. For this purpose, it was necessary to determine the proper costs of each of the several library components and to determine the relative degree of utilization of these library components by the various user groups mentioned above.

The results of this study were initially presented orally to representatives of the Library and of the Controller's Office of Stanford University on September 11, 1964. After some additional data collection and analysis, another oral report was made to representatives of the same group on January 12, 1965. This report presents the summary findings and some of the supporting data for this study. Detailed supporting data are provided in the single copy Appendix that accompanies this report.

II SUMMARY AND CONCLUSION

The objective of this study was to determine what fraction of the total cost of the Stanford University library system can properly be charged to each of the four major groups of users: undergraduate students, graduate students, faculty and staff, and non-Stanford users.

The original scope of the study was to be restricted to the 16 major library facilities. However, it soon became apparent that it was both feasible and practicable to include a larger number of subelements of the entire library system.

During the initial phase of the study, eight separate cost elements were developed for each of the library's cost centers or service facilities from actual cost data provided by the University Controller's Office. The cost elements developed were:

1. Salaries and benefits
2. Book costs
3. Periodical costs
4. Binding costs
5. Supply and expense costs
6. Operating and maintenance costs
7. Building and equipment depreciation costs
8. University administration costs

The method used in developing each of the individual elements of library cost is described in Section III of this report.

Concurrent with the development of the cost elements for each facility, statistics covering circulation by user groups and campus population distribution by user groups were collected for each by the individual facilities. These circulation and population statistics were then used to make a preliminary allocation of the specified cost elements to the four user groups.

Following this preliminary allocation, it was concluded that cost elements were to be allocated to user groups in the manner outlined below:

1. Material costs

   A. Periodicals by population after subtraction of undergraduate portion.

   B. Books by population after subtraction of undergraduate portion.

2. Binding costs, allocated on the basis of 1.A above.

3. Salaries and benefits

   A. Public services by recorded circulation.

   B. Technical processes as outlined in 1.A and 1.B above, modified to include gift materials and materials received on exchange.

4. University administration, library administration, salaries and benefits, and supplies and expenses allocated on the basis of item 3 above.

5. Operating and maintenance costs and building and equipment depreciation.

   A. Public service areas by recorded circulation.

   B. Technical service areas on the basis of 3.B above.

   C. Book storage areas on the basis of combined book costs and periodical costs allocated to user groups in 1 above.

In order to satisfy the requirements of the foregoing method of allocation, the following additional studies or surveys (described in Section IV) were developed:

1. Special study in Cataloging and Acquisition divisions
2. Special survey for allocation of salaries and benefits
3. Special survey of space utilization

The final task performed in this study was the allocation of cost elements for each facility or cost center to the appropriate user group(s). The detailed description of this allocation is given in Section V.

The final allocation of individual cost elements to each of the four major user groups is presented in summary form in Table I.

Based on the methods of cost development and allocation used in this study, it is concluded that, for the fiscal year ending August 31, 1963:

1. The total cost of providing library services to the Stanford University community was $2,604,033

2. The cost of providing service to each of the major user groups was:

User Group	Cost
Undergraduate students	$ 401,728
Graduate students	1,138,112
Faculty and staff	947,624
Non-Stanford users	116,569

3. The ratio of library costs for graduate students to the costs for undergraduate students was found to be 2.8:1

4. The ratio of library costs for faculty and staff to the costs for undergraduate students was found to be 2.4:1

5. The ratio of the combined library costs for the graduate students and faculty and staff to the costs for undergraduate students was found to be 5.2:1.

Total cost ratios and per capita cost ratios of graduate students and faculty and staff related to undergraduate students are presented in Table II.

Table I

ALLOCATION OF INDIVIDUAL COST ELEMENTS TO MAJOR USER GROUPS

	Costs to All Users	Costs for Major User Groups			
		Undergraduate	Graduate	Faculty and Staff	All Other Users
Salaries					
Regular					
Public service	$ 475,569	$104,073	$ 225,682	$ 69,796	$ 76,018
Technical processing	496,370	31,984	169,599	294,787	--
Acquisition Division	95,084	23,771	41,040	30,273	--
Cataloging Division	138,634	33,272	60,636	44,726	--
Undergraduate Library development	12,796	12,796	--	--	--
Binding	1,753	53	1,034	666	--
Library administration					
Public service	22,389	4,908	10,613	3,284	3,584
Technical processing	34,966	4,781	12,797	17,388	--
Book costs	298,840	62,764	122,814	112,401	861
Periodical costs	190,321	3,010	115,475	71,836	--
Binding costs	75,168	1,973	44,455	28,740	--
Supply and expense costs					
Public service	70,198	19,891	27,759	11,105	11,443
Technical processing	52,669	5,876	17,113	29,680	--
Operating and maintenance costs					
Public service	128,821	26,801	70,327	17,632	14,061
Technical processing	26,986	5,466	10,422	11,098	--
Book storage	255,156	23,692	107,299	124,165	--
Building and equipment depreciation					
Public service	38,574	8,215	20,928	5,247	4,184
Technical processing	8,034	1,633	3,099	3,302	--
Book storage	76,705	7,259	32,313	37,133	--
University administration					
Public service	49,049	12,333	23,228	7,070	6,418
Technical processing	55,951	7,177	21,479	27,295	--
Total	$2,604,033	$401,728	$1,138,112	$947,624	$116,569

Source: Stanford Research Institute.

Table II

RATIOS OF TOTAL COST AND PER CAPITA COST FOR GRAUDATE STUDENT AND FACULTY AND STAFF GROUPS AS RELATED TO UNDERGRADUATE STUDENT GROUP

	Under-graduate Students	Graduate Students	Faculty and Staff	Combined Graduate and Faculty and Staff	Others
Total costs					
Cost allocation	$401,728	$1,138,112	$947,624	$2,085,736	$116,569
Percent distribution	15.4%	43.7%	36.4%	80.1%	4.5%
Dollar ratio	1.0	2.8	2.4	5.2	0.4
Per capita cost					
Population	5,175	4,970	3,666	8,636	
Percent distribution	37.5%	36.0%	26.5%	62.5%	
Per capita cost	$78	$229	$258	$242	
Ratio of per capita cost	1.0	2.9	3.3	3.1	

Source: Stanford Research Institute.

III DEVELOPMENT OF ELEMENTS OF LIBRARY COST

Total library cost was developed from information supplied by the Stanford University Controller's Office for the fiscal year ending August 31, 1963. This cost information represented a transcript of actual charges taken from the general ledger accounting records of the University. In general, cost data supplied by the Controller's Office was identified to a specific facility. This identification greatly facilitated the allocation of elements of cost to specific library facilities. However, it was necessary in some instances to obtain supplemental information from the library office in order to effect proper allocation.

A discussion of each cost element is given below. The specific cost components for each facility are given in Table III.

Salary and Benefit Costs

Salary costs were generally available as direct charges to specific facilities. In those instances, such as in the Science Division where salary costs represented a composite of several facilities, it was necessary to refer to budget estimates in order to make the necessary estimated allocation to individual facilities.

Cost attributable to staff benefits was supplied for the total library complex. This cost was allocated to each facility in direct proportion to the total salaries charged to the facility.

Book and Periodical Costs

Book and periodical costs supplied by the Controller's Office were represented as a single item of cost. For purposes of this study, it was necessary to separate this single cost item into two cost elements--book costs and periodical costs--and then to separately allocate each cost element to each facility.

As a first step, the combined cost of books and periodicals was distributed to the various facilities on the basis of a special report of expenditures provided by the library office. This report provided the

Table III

ELEMENTS OF LIBRARY COST
(Dollars)

	Salaries and Benefits	Books	Periodicals	Binding	Supplies and Expenses	Operating and Maintenance	Building and Equipment Depreciation	Subtotal	University Administration	Total Library
Total Library Complex	$1,277,561	$298,840	$190,321	$75,168	$122,867	$410,963	$123,313	$2,499,033	$105,000	$2,604,033
Total Autonomous Libraries	$ 503,131	$115,836	$ 81,093	$29,895	$ 41,203	$164,195	$ 48,819	$ 984,172	$ 41,351	$1,025,523
Hoover Institution	$ 243,362	$ 43,605	$ 9,985	$ 3,786	$ 23,581	$ 77,582	$ 23,066	$ 424,967	$ 17,856	$ 442,823
Lane Medical Library	64,210	10,376	28,295	11,593	4,968	39,824	11,841	171,107	7,189	178,296
Law Library	69,129	26,103	32,356	6,167	4,521	29,913	8,894	177,083	7,440	184,523
Jackson Business Library	79,880	16,507	9,221	6,618	4,672	11,898	3,538	132,334	5,560	137,894
Food Research Institute	7,869	1,083	1,236	97	640	2,985	888	14,798	622	15,426
Linear Accelerator Library	38,681	18,162	--	1,634	2,821	1,993	592	63,883	2,684	66,567
Total University Libraries	456,070	161,366	108,344	41,922	56,605	229,447	69,344	1,123,098	47,189	1,170,287
Total Science Division	$ 130,019	$ 22,519	$ 48,218	$15,599	$ 15,261	$ 47,030	$ 13,990	$ 292,636	$ 12,296	$ 304,932
Engineering Libraries	$ 31,187	$ 4,091	$ 10,655	$ 3,462	$ 2,099	$ 14,773	$ 4,392	$ 70,659	$ 2,969	$ 73,628
Engineering Library	$ 31,187	$ 4,091	$ 9,160	$ 3,019	$ 1,766	$ 10,513	$ 3,126	$ 62,862	$ 2,641	$ 65,503
Engineering Economics Planning Library					24	255	76	355	15	370
Guggenheim Aeronautics Library			216	62	117	1,865	555	2,815	118	2,933
Radioscience Library					28	324	96	448	19	467
Ryan Nuclear Technology Library			1,279	381	96	509	151	2,416	102	2,518
Solid State Library					68	1,307	388	1,763	74	1,837
Swain Chemistry Libraries	11,333	378	8,290	1,291	625	3,537	1,051	26,505	1,114	27,619
Swain Chemistry Library	$ 11,333	$ 291	$ 8,290	$ 1,291	$ 581	$ 3,189	$ 948	$ 25,923	$ 1,090	$ 27,013
Chemical Engineering Library		87			44	348	103	582	24	606
Branner Geological Libraries	15,091	5,184	6,158	2,314	821	8,294	2,465	40,332	1,695	42,027
Branner Geological Library	$ 15,091	$ 5,184	$ 6,158	$ 2,314	$ 756	$ 6,902	$ 2,052	$ 38,457	$ 1,616	$ 40,073
Geophysics Library					16	311	92	419	18	437
Mineralogy Library					54	1,081	321	1,456	61	1,517
Biological Libraries	15,820	4,333	11,493	2,762	2,157	9,991	2,980	49,536	2,081	51,617
Falconer Biology Library	$ 13,056	$ 1,292	$ 7,033	$ 1,625	$ 1,172	$ 3,398	$ 1,010	$ 28,586	$ 1,201	$ 29,787
Systematic Biology Library	2,185	1,454	1,296	617	483	2,504	744	9,283	390	9,673
Hopkins Marine Station Library	347	1,363	2,943	458	451	3,904	1,161	10,627	446	11,073
Physical Education for Women Library	232	224	221	62	51	185	65	1,040	44	1,084

Table III (Continued)

	Salaries and Benefits	Books	Periodicals	Binding	Supplies and Expenses	Operating and Maintenance	Building and Equipment Depreciation	Subtotal	University Administration	Total Library
Physics-Math-Statistics Libraries	$ 27,782	$ 7,672	$ 11,622	$ 5,770	$ 3,270	$ 9,728	$ 2,892	$ 69,736	$ 2,930	$ 72,666
Physics-Math-Statistics Library	$ 28,435	$ 4,768	$ 8,159	$ 5,287	$ 2,699	$ 7,764	$ 2,308	$ 59,420	$ 2,497	$ 61,917
Computer Sciences Library	347	2,119	756	231	338	1,359	404	5,554	233	5,787
Hansen Microwave Laboratory Library	--	785	2,707	252	233	605	180	4,762	200	4,962
Technical Information Service	27,806	861	--	--	6,284	707	210	35,868	1,507	37,375
Humanities and Social Sciences Division	$ 136,453	$ 13,417	$ 23,257	$ 6,799	$ 12,033	$ 62,304	$ 18,601	$ 272,864	$ 11,465	$ 284,329
Current Periodicals Service[a]	15,975		15,862		1,546	429	128	33,940	1,426	35,366
Humanities Room[a]	48,741	2,508	1,332	4,788	3,247	12,817	3,811	77,244	3,245	80,489
Microtext and Newspaper Room[a]	2,146				761	11,425	3,397	17,729	745	18,474
Shainwald Social Science Room[a]	858				597	5,852	1,740	9,047	380	9,427
Briggs Memorial Library (English)[a]					57	1,013	301	1,371	58	1,429
Classics Library[a]		767	411		91	333	99	1,704	72	1,776
Communications Library[a]		1,235	602	31	160	639	190	2,857	120	2,977
Cubberly Education Library	42,671	2,488	2,264	1,065	3,299	21,088	6,270	79,145	3,325	82,470
Memorial Church Library[a]		208	129		42	407	121	907	38	945
Modern European Language Collection[a]	215	698	873		166	1,621	482	4,055	170	4,225
Music Library (incl. Arch. Rec.)	19,050	3,410	998	756	1,445	3,914	1,164	30,737	1,291	32,028
Tanner Memorial Library of Philosophy	4,060	1,064	352	123	324	1,375	409	7,707	325	8,032
V. J. West Memorial Library	2,737	1,039	434	36	295	1,391	489	6,421	270	6,691
Special Collections Division	31,458	4,927	214	272	2,843	18,895	5,619	64,228	2,699	66,927
Bender Room[b]	$ 22,914	$ 2,451	$ 102	$ 221	$ 2,008	$ 12,090	$ 3,595	$ 50,383	$ 2,117	$ 52,500
Brasch Newton Collection[b]										
Felton Library[b]		2,023	112		133	963	286			
Jones Room (Creative Work)[b]		209			86	1,432	426			
Robinson Collection[b]					50	988	294			
Stanford Collection and Manuscript Department	8,544	244		51	566	3,422	1,018	13,845	582	14,427
Government Document Division	34,667	457	4,768	7,170	3,588	12,182	3,622	66,454	2,792	69,246

a. Combined for allocation purposes.
b. Combined for allocation purposes.

Table III (Concluded)

	Salaries and Benefits	Books	Periodicals	Binding	Supplies and Expenses	Operating and Maintenance	Building and Equipment Depreciation	Subtotal	University Administration	Total Library
Circulation Division	$ 123,473	$120,046	$ 31,887	$12,082	$ 22,880	$ 89,036	$ 27,512	$ 426,916	$ 17,937	$ 444,853
Inter-library loan service	6,976				301	69	21	7,367	309	7,676
Language Listening Room	3,112				260	1,957	688	6,017	253	6,270
Loan Desk	94,085	105,661	31,887	12,082	19,466	76,909	22,866	362,956	15,250	378,206
Reserve Book Room	14,360	12,843			2,263	5,135	1,804	36,405	1,530	37,935
Western Civilization Library	4,940	1,542			590	4,966	2,133	14,171	595	14,766
Miscellaneous	318,360	21,638	884	3,351	25,059	17,321	5,150	391,763	16,460	408,223
Photocopy Service	10,225	120			15,329			25,674	1,079	26,753
Undergraduate Division (New Library)	12,796	4,498			239			17,533	737	18,270
Travel					2,770			2,770	116	2,886
Dean's Office		6,848			12			6,860	288	7,148
Stanford Overseas		3,734			333			4,067	171	4,238
Dissertation and Thesis Fees		6,129		3,351	312			9,792	411	10,203
Institute of Hispanic American Studies		309	884		58			1,251	53	1,304
Acquisition Division	97,597					7,749	2,304	107,650	4,523	112,173
Cataloging Division	138,634				5,482	5,167	1,536	150,819	6,336	157,155
Binding	1,753				524			2,277	96	2,373
Library Administration	57,355					4,405	1,310	63,070	2,650	65,720

Source: Stanford University Controller.

detailed breakdown of book and periodical costs necessary for proper allocation of these costs to specific facilities.

Next, the cost of periodicals was determined and allocated on the basis of information supplied by the Acquisition Division. This information, provided in the form of a catalog of periodicals purchased for the library complex, identified the ordering facility and the title and cost of each periodical purchased.

Finally, the periodical costs were subtracted from the total cost of books and periodicals, with the remainder treated as the cost of books purchased for each of the respective facilities.

Binding Costs

With the exception of those few instances in which a binding charge was made to a specific facility, binding costs were provided by the Controller's Office only as a total charge to the University libraries. Allocation of this composite cost to the various facilities was made on the basis of actual volumes bound for each facility. The binding work for each facility was described in a special report provided by the library office.

Supply and Expense Costs

The majority of charges to this cost element were identified by the Controller's Office as direct charges to specific facilities. All charges that could not be identified with a specific facility were distributed over all other facilities in direct proportion to a subtotal of other expenditures, i.e., salary and benefit costs, book costs, periodical costs, and binding costs.

Operating and Maintenance Costs

Operating and maintenance cost was supplied for the total library complex. This cost was allocated in direct proportion to square footage and use-weeks of the respective facilities. Square-foot area assignment data were obtained from a space allocation study completed by the Controller's Office in July of 1964. Use-week data were supplied by the library office.

Building and Equipment Depreciation Costs

Building and equipment depreciation cost was supplied for the total library complex. Allocation of this cost element was made on the basis of square-foot area assigned to each of the library facilities. Square-foot area assignment was obtained from a space allocation study completed by the Controller's Office in July of 1964.

University Administration Costs

Cost of University administration was supplied for the total library complex. This cost was distributed over all the facilities in direct proportion to a subtotal of all other expenditures attributable to a library facility, i.e., salary and benefit costs, book costs, periodical costs, binding costs, operating and maintenance costs, and depreciation.

IV SPECIAL STUDIES AND SURVEYS

During the course of this study, five special studies or surveys were made to aid in the allocation of cost elements to each of the user groups. These special studies covered circulation, population distribution, Cataloging and Acquisition divisions, salaries and benefits, and space utilization. A discussion of each study or survey is given below.

Circulation

Data on the actual use of the library facilities were to be used as one basis for allocating a portion of the facility costs. Consequently, it was necessary to obtain some measures of the use made of various facilities by each of the various user groups. Two basic methods were used: (1) the analysis of charge-out or loan slips collected by the libraries, and (2) the actual physical census and interviewing of people who were using the facilities. The first method was the major source of circulation data for this study.

Practical operating problems prevented the acquisition of data from all of the libraries; however, most of the libraries were analyzed, including all of the major ones. Most of the participating libraries started to keep summary records of their circulation traffic (see Appendix for complete records) from the beginning of the study project (May 1964) until shortly before the planned termination date of the study (August 1964). There were variances in the dates covered by each library. Furthermore, this period was probably not completely representative of the annual traffic, since in most libraries it included primarily the final exam and "dead week" of one semester, followed by the summer session. A few libraries (Engineering Library, Hoover) kept these records as part of their normal practice and so were able to give circulation figures for each user group for the last 12-month period.

The list of libraries studied, the summary breakdown by user group for each of the libraries, and statements about the corresponding sample size for each facility are given in Table IV.

At one point in the study, an attempt was made to analyze the traffic at selected facilities by having an interviewer stop the users as they

Table IV

LIBRARY UTILIZATION BY VARIOUS USER GROUPS

	Circulation Distribution						Interview Distribution					
	Undergraduate Students	Graduate Students	Faculty and Staff	Others	Sample Size (number of items)	Percent of Year Use Weeks	Undergraduate Students	Graduate Students	Faculty and Staff	Others	Sample Size (number of people)	Percent of Year Use Days
Autonomous libraries												
Hoover Institution	21.4%	27.3%	24.2%	27.1%	50,527	100.0%						
Lane Medical Library	5.2	52.0	22.2	20.6	9,952	19.2	7.2%	56.5%	34.8%	1.5%	69	0.16%
Law Library	1.2	89.5	6.8	2.5	8,591	21.2	7.2	85.5	4.9	2.4	41	0.14
Jackson Business Library	0.4	95.1	3.6	0.9	4,835	10.5	5.1	93.1	--	1.8	59	0.27
Food Research Institute												
Linear Accelerator Library												
Engineering libraries												
Engineering Library	9.5	58.6	12.2	19.7	13,678	87.5	29.0	64.4	5.4	1.2	168	0.27
Engineering Economics Planning Library												
Guggenheim Aeronautics Library												
Radioscience Library												
Ryan Nuclear Technology Library												
Solid State Library												
Swain Chemistry Library												
Chemical Engineering Library	10.3	45.4	35.4	8.9	788	21.2						
Branner Geological Libraries												
Branner Geological Library												
Geophysics Library	3.9	71.4	21.9	2.8	1,348	21.2						
Mineralogy Library												
Government Document Division	25.8	47.4	24.0	2.8	1,495	19.2						
Biological libraries												
Falconer Biology Library	40.0	47.8	6.0	6.2	1,871	21.2						
Systematic Biology Library												
Hopkins Marine Station Library												
Physical Education for Women Library												
Physics-Math-Statistics Libraries												
Physics-Math-Statistics Library	12.3	61.2	22.6	3.9	4,431	19.2	26.1	67.7	4.2	2.0	96	0.14
Computer Science Library	20.7	48.8	30.3	0.2	585	21.2						
Hansen Microwave Library												

Table IV (Concluded)

	Circulation Distribution						Interview Distribution					
	Undergraduate Students	Graduate Students	Faculty and Staff	Others	Sample Size (number of items)	Percent of Year Use Weeks	Undergraduate Students	Graduate Students	Faculty and Staff	Others	Sample Size (number of people)	Percent of Year Use Days
Circulation Division												
Inter-library Loan Service	--	31.9	14.8	53.3	893	13.5						
Language Listening Room	91.0	6.8	2.2	--	1,306	11.3						
Loan Desk	37.7	39.6	12.7	10.0	38,856	21.2	64.1	26.9	6.7	2.3	1,284	0.27
Reserve Book Room	79.9	19.6	0.5	--	14,190	20.5	82.5	17.0	0.3	0.2	560	0.27
Western Civilization Library	99.4	0.2	0.4	--	7,766	13.9						
Technical Information Service	--	--	--	100.0	2,769	25.0						
Humanities and Social Sciences Division												
Humanities and Social Sciences Division	23.6	67.1	6.9	2.4	8,892	15.4						
Film Rental Service												
House Libraries												
Humanities Room							62.5	33.9	3.6	--	133	0.14
Microtext and Newspaper Room												
Shainwald Social Science Room												
Briggs Memorial Library (English)												
Classics Library												
Communications Library												
Cubberly Education Library	4.8	85.5	5.8	3.9	10,757	20.0	38.2	58.6	1.6	1.6	63	0.17
Memorial Church Library												
Modern Europe Language Library												
Music Library (incl. Arch. Rec.)	46.5	37.6	11.3	4.6	2,308	17.3						
Tanner Memorial Library of Philosophy	32.6	53.2	6.2	8.0	829	21.2						
V. J. West Memorial Library (Political Science)	40.6	40.1	11.3	8.0	409	6.8						
Special Collections Division												
Bender Room												
Brasch Newton Collection												
Felton Library	36.4	35.8	9.3	18.5	666	19.2						
Jones Room (Creative Work)												
Robinson Collection												
Stanford Collection and Manuscript Department	25.1	26.8	10.5	37.6	56	19.2						

Source: Stanford Research Institute.

came out of the library and ask them what user group they belonged to. They were asked whether they had: (1) checked out material, (2) used some material without checking it out, or (3) used the facilities for a study hall. The pretesting of this method showed it to be much too expensive to be used to collect the type and amount of data needed, and it was discontinued. The actual records are given in the separate Appendix to this report.

The collected data appear to provide a good first estimate of the relative recorded use of the major facilities by each user group. However, some comments seem appropriate at this point in considering future studies of this type. First, data were not collected for some of the facilities. For future studies it should be possible to plan the data collection methods so that each facility that is treated as a separate cost accounting center or line item would have corresponding circulation figures. Second, a detailed study of the recorded circulation traffic of most of the facilities showed a great variation in traffic from month to month, week to week, and even day to day, so that simple sampling measurements could give misleading results. Some of this variation is described graphically in Figures 1 through 6. The use patterns seem to be directly related to many factors, such as the semester, the phase (beginning, middle, end) of the semester, the day of the week, and the weather. For these reasons and others, it would seem more appropriate on a long-range basis to keep a continuous record of recorded circulation by each user group for each facility. Third, there seems to be considerable variety in the forms developed and used by each of the different facilities to record their charge-cuts. If a continuous monitoring program were established, some consideration might profitably be given to standardizing all of the different charge-out forms.

Fourth, some methodological improvement would be realized by providing a means for recording the total number of days an item is kept out on loan, so that use-day records could be maintained as well as records of the absolute number of charge-outs. This would provide a more accurate measure of facility use and would help to equalize the situation in which faculty members make a single charge-out transaction to keep a book out for the entire semester.

Population Distribution

Campus population distributed to the undergraduate students, graduate students, and faculty and staff offered one approach for allocation of cost elements to appropriate user groups. While this method would make no allowance for the non-Stanford user group, it was conceivable that such a method would offer analytical comparisons with other methods, such as recorded circulation.

FIGURE I
UTILIZATION OF LOAN DESK BY USER GROUPS

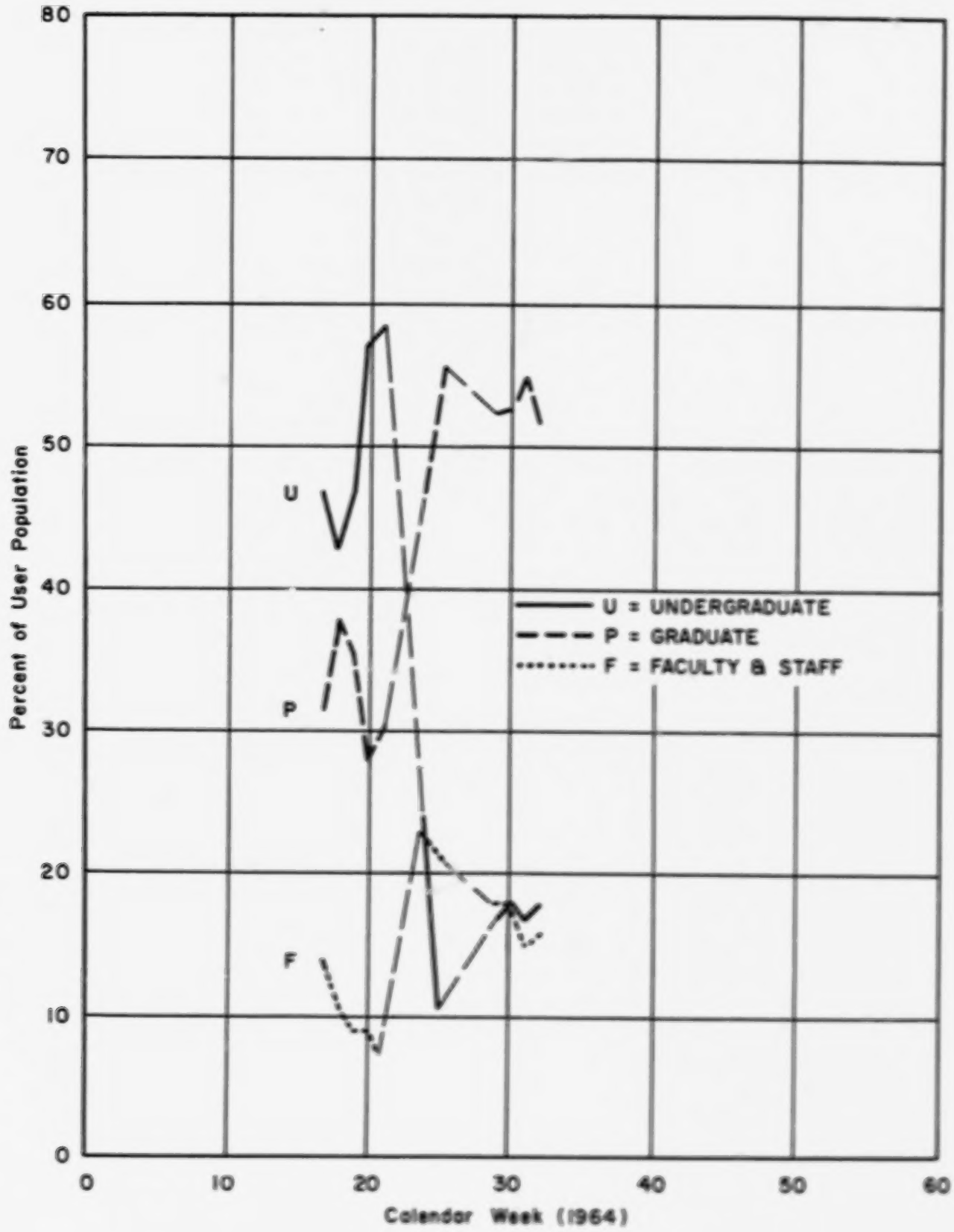


FIGURE 2
UTILIZATION OF LANE MEDICAL LIBRARY BY USER GROUP

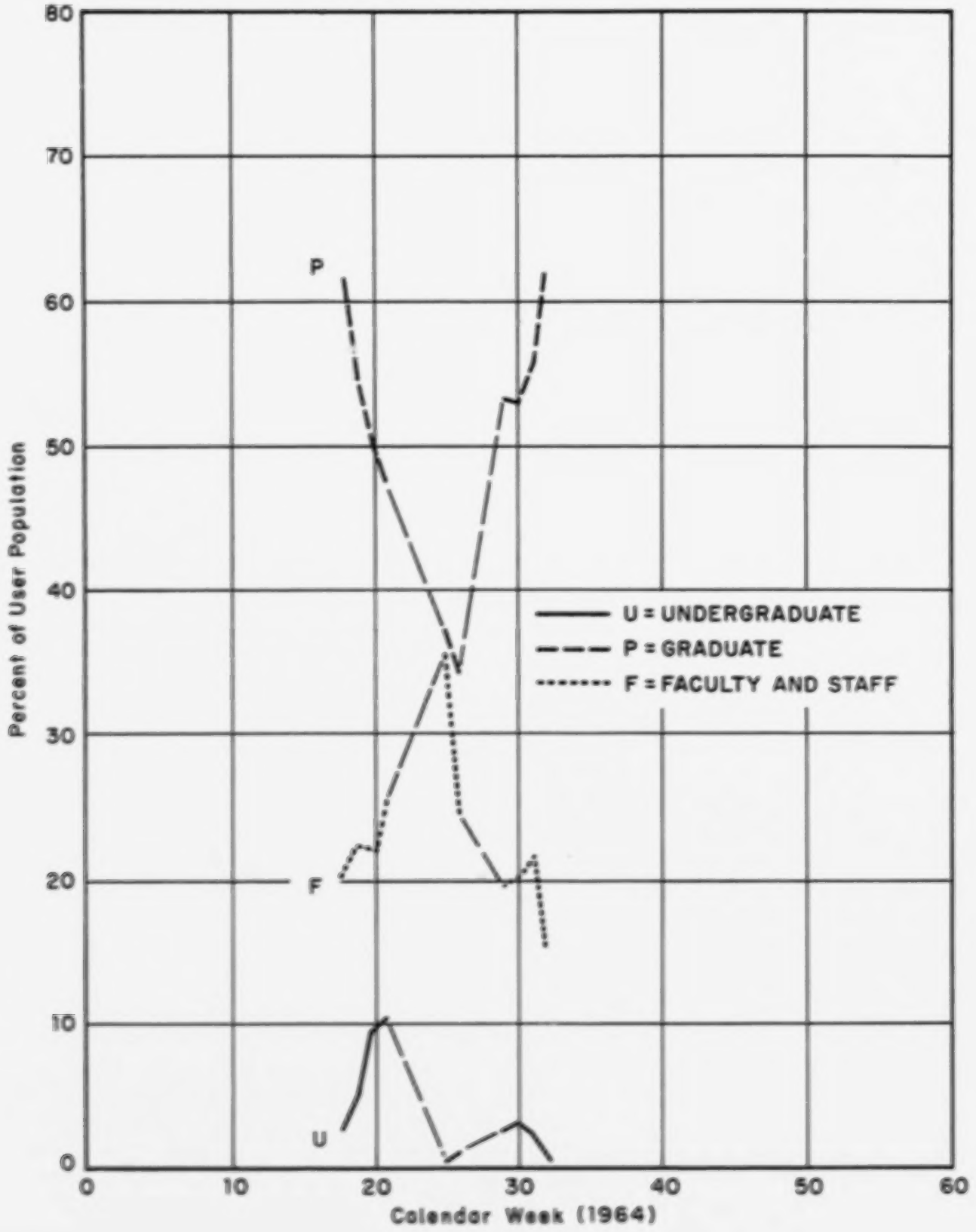


FIGURE 3

UTILIZATION OF PHYSICS-MATH-STATISTICS LIBRARY BY USER GROUPS

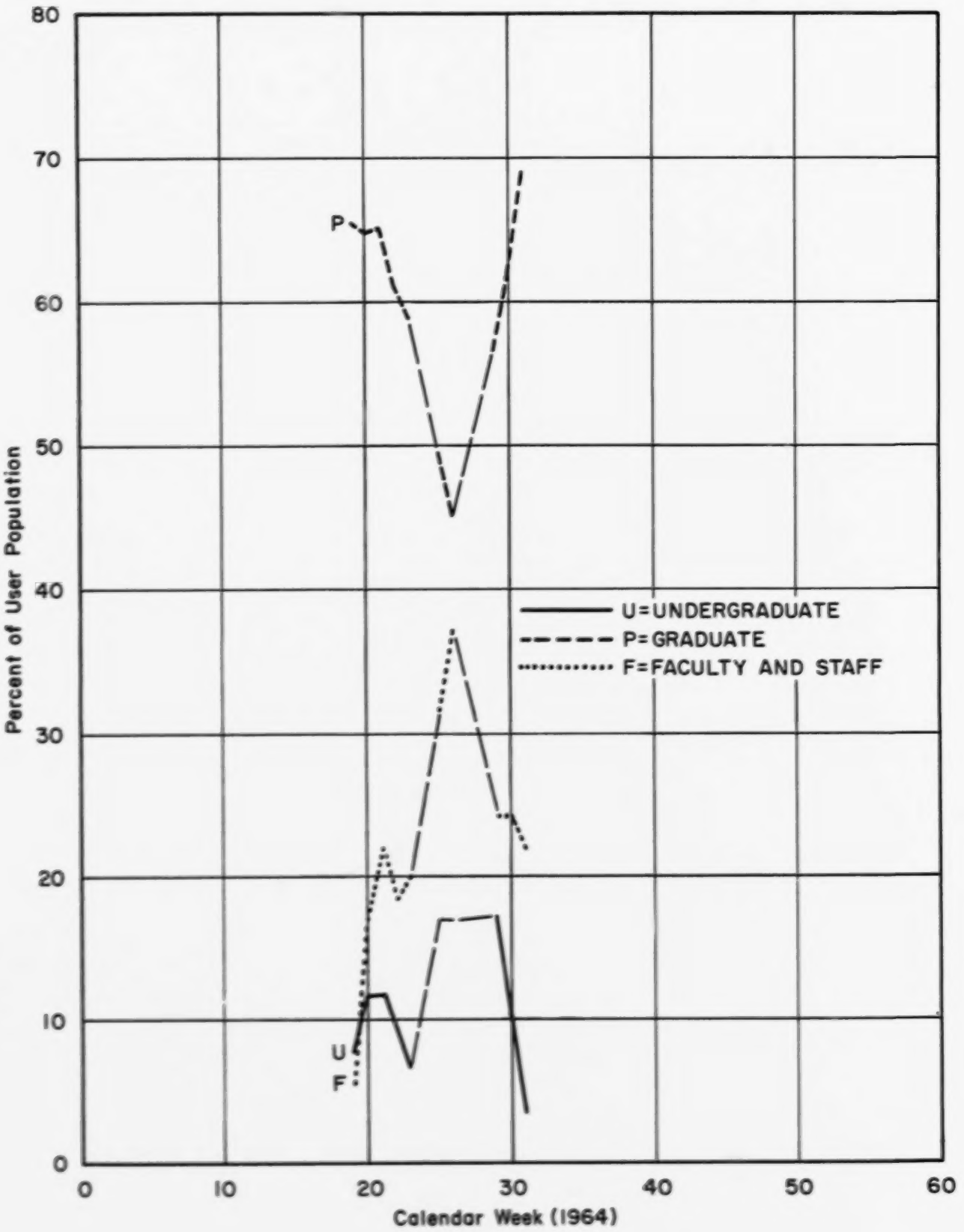


FIGURE 4
UTILIZATION OF RESERVE BOOK ROOM BY USER GROUPS

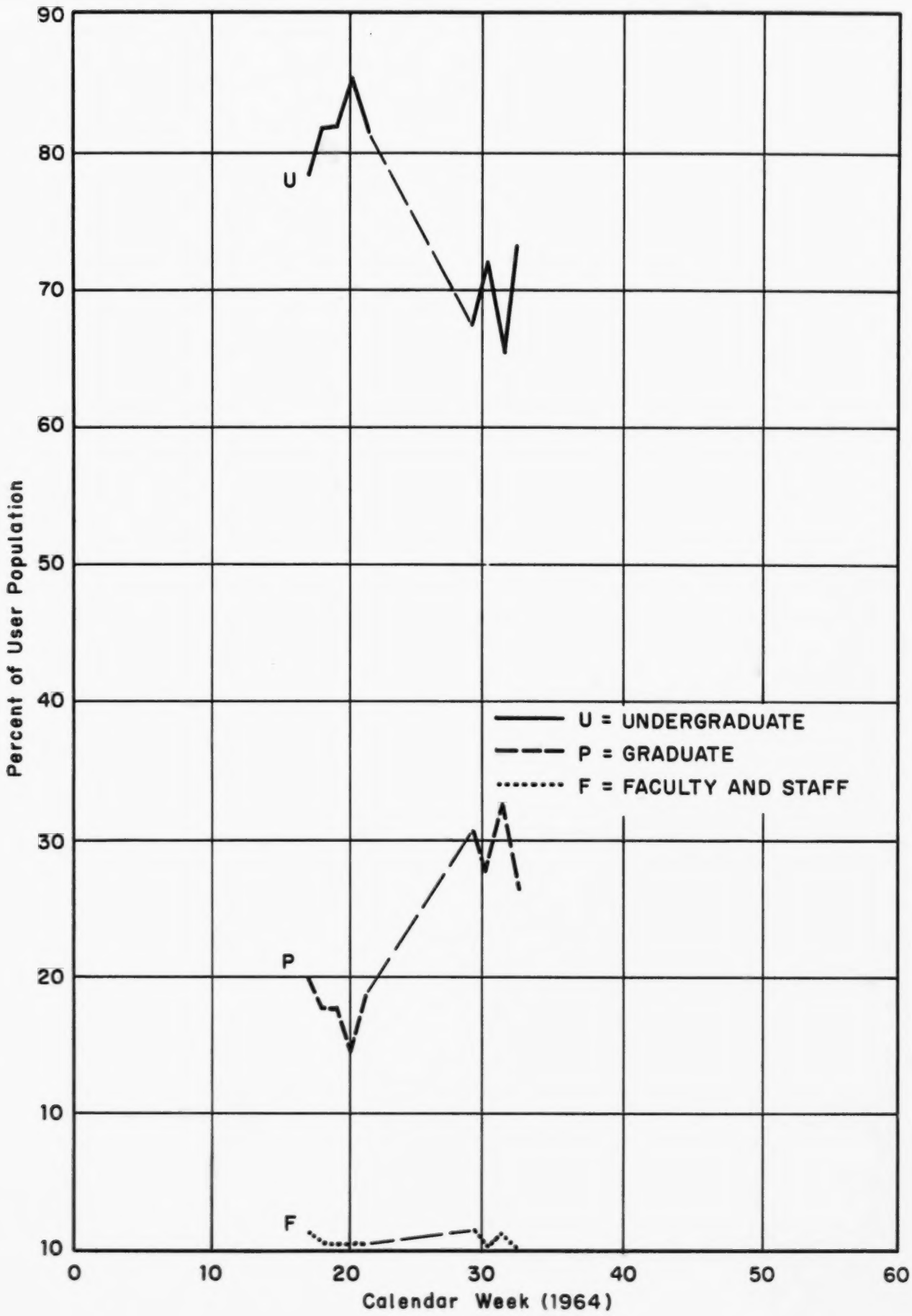


FIGURE 5

UTILIZATION OF GOVERNMENT DOCUMENT DIVISION BY USER GROUPS

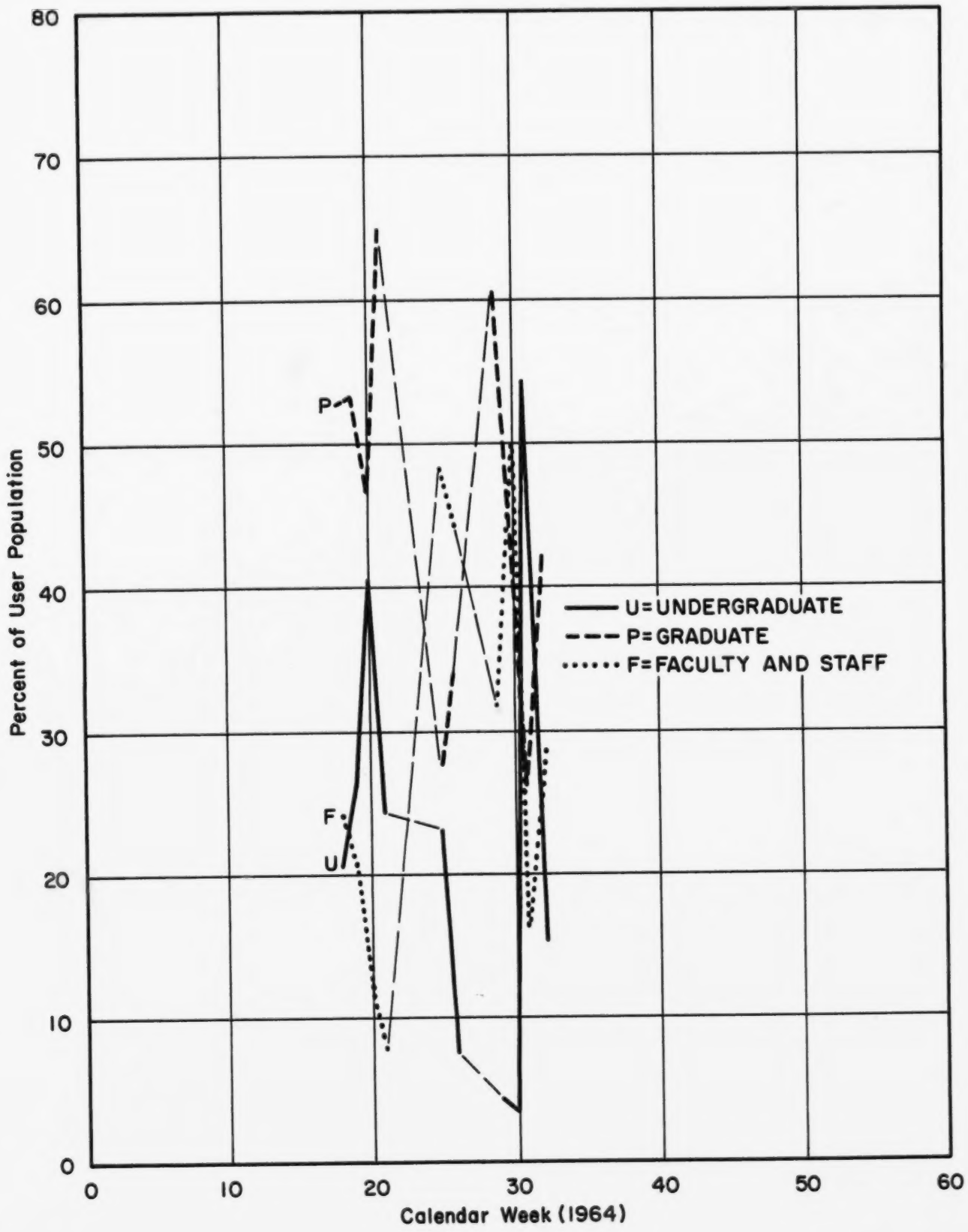
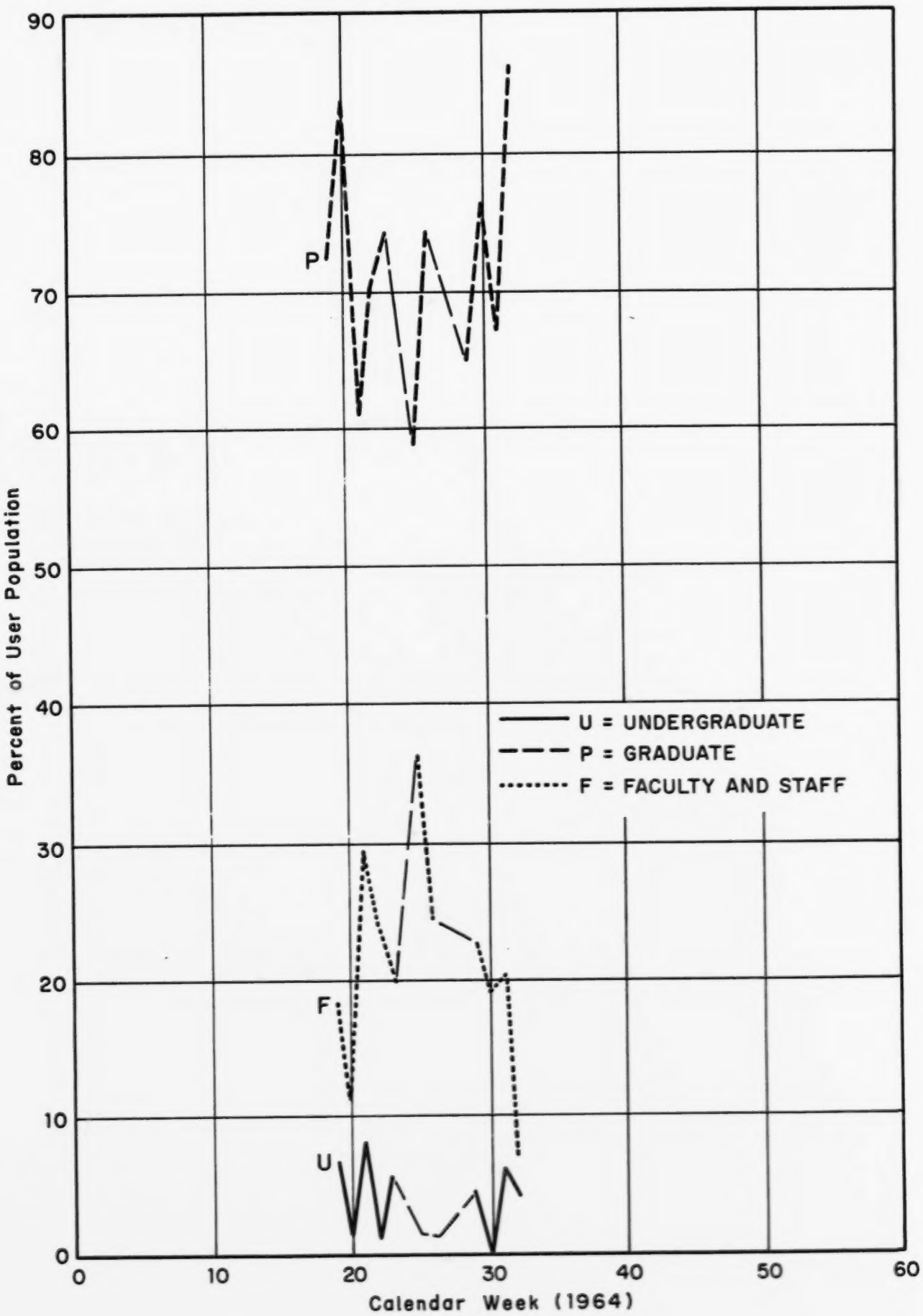


FIGURE 6

UTILIZATION OF BRANNER GEOLOGICAL LIBRARY BY USER GROUPS



In order to have available the means for allocating cost elements on a population basis and to develop per capita cost ratios, it was necessary to obtain a census of the University campus and to distribute these census figures to the user groups located within each of the appropriate facilities.

Student population was obtained from a special survey conducted and compiled by representatives of the Controller's Office for the 1963-64 winter quarter. Student population was distributed to appropriate facilities on the basis of school enrollment of library availability.

Faculty and staff population was obtained from a special survey conducted and compiled by representatives of the Controller's Office to satisfy the "1964 Equal Employment Opportunity Compliance Report." Only three personnel classifications presented in this survey were considered as representative of the "faculty and staff" user group, i.e., professional, technical, and administrators and managers. Population figures for these personnel classifications were distributed to appropriate library facilities on the basis of school employment or library availability.

The population distribution assumed for each user group of each library facility is presented in Table V.

Cataloging and Acquisition Divisions

The primary purpose of the special study conducted in the Cataloging and Acquisition divisions was to determine the proportionate amount of technical processing time devoted to the undergraduate user group. Additionally, it was desirable to obtain volume and cost data attributable to the undergraduate user group versus the graduate and faculty and staff user groups.

This study was conducted, under the joint supervision of the Controller's Office and the library office, for a period of four weeks. Statistical data were obtained from individual time records maintained by personnel performing cataloging and acquisition functions within these divisions. Average book cost data were developed from actual cost of items processed during this period.

The results of this study are shown in Table VI.

Table V

POPULATION DISTRIBUTION OF USER GROUPS AMONG LIBRARY FACILITIES

	Undergraduate Students	Graduate Students	Faculty and Staff
Total Library Complex	5,175	4,970	3,666
Total Autonomous Libraries	119	1,241	1,472
Hoover Institution	--	--	58
Lane Medical Library	114	380	808
Law Library	5	354	32
Jackson Business Library	--	491	71
Food Research Institute	--	16	24
Linear Accelerator Library	--	--	479
Total University Libraries	5,028	3,681	2,187
Total Science Division	1,352	2,168	1,444
Engineering Libraries	662	1,364	675
Engineering Library	662	1,364	675
Engineering Economics Planning Library			
Guggenheim Aeronautics Library			
Radioscience Library			
Ryan Nuclear Technology Library			
Solid State Library			
Swain Chemical Libraries	108	88	137
Swain Chemical Library			
Branner Geological Libraries	29	126	24
Branner Geological Library	14	83	22
Geophysics Library	13	22	2
Mineralogy Library	2	21	--
Biological Libraries	248	85	12
Falconer Biology Library	248	85	
Systematic Biology Library			
Hopkins Marine Station Library			
Physical Education for Women Library			12
Physics-Math-Statistics Libraries	305	505	596
Physics-Math-Statistics Library	305	447	279
Computer Science Library		48	48
Hansen Microwave Laboratory Library		10	269

Table V (Concluded)

	Undergraduate Students	Graduate Students	Faculty and Staff
Technical Information Service	--		--
Humanities and Social Sciences Division	**339**	**826**	**373**
Current Periodicals Service			
Film Rental Service			
House Libraries			
Humanities Room	33	87	53
Microtext and Newspaper Room			
Shainwald Social Science Room			
Briggs Memorial Library (English)	46	30	11
Classics Library	36	61	51
Communications Library	11	481	158
Cubberly Education Library			2
Memorial Church Library	67	89	52
Modern European Language Library	28	40	17
Music Library (incl. Arch. Rec.)	31	21	19
Tanner Memorial Library of Philosophy	87	14	10
V. J. West Memorial Library (Political Science)			
Special Collections Division			
Bender Room			
Brasch Newton Collection			
Felton Library			
Jones Room (Creative Work)			
Robinson Collection			
Stanford Eollection and Manuscript Department			
Government Document Division			
Circulation Division	**3,337**	**687**	**370**
Inter-library Loan Service			
Language Listening Room			
Loan Desk	3,337	687	370
Reserve Book Room			
Western Civilization Library			
Miscellaneous	**18**	**34**	**7**
Photocopy Service			
Undergraduate Division (New Library)			
Travel			
Dean's Office			
Stanford Overseas			
Dissertation and Thesis Fees			
Institute of Hispanic American Studies	18	34	7

Source: Stanford Research Institute.

Table VI

ALLOCATION OF CATALOGING AND ACQUISITION COSTS TO USER GROUPS

	Under-graduates	Others	Total
Titles cataloged	658	1,408	2,066
Volumes cataloged	803	1,415	2,218
Serials cataloged	80	1,099	1,179
Catalog time (hours)	165	532	697
Acquisition time (hours)	157	467	624
Gift and exchange titles	122	216	338
Gift and exchange volumes	140	263	403
Average book cost (dollars)	$5.65	$7.74	$6.98

Source: Stanford University.

Salaries and Benefits

The purpose of this special survey, conducted by representatives of the Controller's Office, was to determine the proportionate amount(s) of the salary and benefit budget to be allocated to either public service functions or technical processing functions. For purposes of this study, public service and technical processing are defined as follows:

1. Public service - All direct and indirect service provided the public once the library items have been prepared for public use.

2. Technical processing - All processes having to do with the selection, acquisition, preparation, and storage of library items prior to the time of use by the public.

In lieu of a comprehensive time study, the head librarian of each facility was asked to provide a percentage estimate of their salary and benefit budget allocated to the foregoing functions. Additionally, the head librarian of each facility was asked to make a percentage estimate of the technical processing budget devoted to undergraduate students.

The results of this study are presented in Table VII.

Space Utilization

The purpose of this special survey, conducted by representatives of the Controller's Office, was to determine the proportionate amount(s) of library space designated as either a Public Service Area, Technical Processing Area, or Book Storage Area. For purposes of this study, these areas are defined as follows:

1. Public Service Area - All areas directly and indirectly provided for service to the public.

2. Technical Processing Area - All areas provided for selection, acquisition, cataloging, preparation, and storage of items prior to use by the public.

3. Book Storage Area - All areas provided for the storage of books.

In lieu of a comprehensive space study, the head librarian of each facility was asked to provide a percentage estimate of their total usable space allocated to the foregoing functions.

The results of this survey are presented in Table VIII.

Table VII

ESTIMATED PERCENTAGE DISTRIBUTION OF SALARIES AND BENEFITS
BY TYPE OF SERVICE

	Public Service	Technical Processing	Technical Processing Devoted to Undergraduate Students
Hoover Institution	24%	76%	--%
Lane Medical Library	50	50	5
Law Library	40	60	2
Jackson Business Library	45	55	--
Food Research Institute	10	90	--
Linear Accelerator Library	26	74	--
Engineering Libraries	60	40	10
Swain Chemical Library	81	19	25
Branner Geology Library	21	79	25
Biological Library	52	48	25
Physics, Math, and Statistics Libraries	39	61	7
Technical Information Service	100	--	--
Humanities and Social Science Division	50	50	30
Cubberly Education Library	56	44	5
Music Library	57	43	35
Tanner Memorial Library of Philosophy	50	50	44
V. J. West Memorial Library	50	50	75
Special Collections Division	49	51	30
Government Document Division	29	71	--
Circulation Division	99	1	75

Source: Stanford University.

Table VIII

ESTIMATED PERCENTAGE ALLOCATION OF LIBRARY SPACE, BY TYPE OF USE

	Public Service	Technical Processing	Book Storage
Hoover Institution	12%	5%	83%
Lane Medical Library	32	--	68
Law Library	32	3	65
Jackson Business Library	35	3	62
Food Research Institute	31	2	67
Linear Accelerator Library	27	25	48
Engineering Libraries	82	2	16
Swain Chemical Library	39	2	59
Branner Geology Library	11	3	86
Biological Library	41	1	58
Physics, Math, and Statistics Libraries	72	1	27
Technical Information Service	100	--	--
Humanities and Social Science Division	58	2	40
Cubberly Education Library	36	1	63
Music Library	53	4	43
Tanner Memorial Library of Philosophy	81	3	16
V. J. West Memorial Library	15	--	85
Special Collections Division	40	14	46
Government Document Division	23	2	75
Circulation Division	25	1	74
Library Administration	39	61	--
Acquisition Division	--	100	--
Cataloging Division	--	100	--

Source: Stanford University.

V ALLOCATION OF ELEMENTS OF LIBRARY COST TO USER GROUPS

The eight elements of library cost were separately allocated to appropriate user groups in accordance with the methods specified by the University. The following paragraphs present a detailed description of this allocation.

Salaries and benefits

For allocation purposes, salaries and benefits were considered to be of two types:

1. Regular salaries - Those chargeable to each of the individual facilities.

2. Special salaries - Those chargeable to special facilities or cost centers, such as the Acquisition Division.

The steps used in the detailed allocation for each of the salary categories are described below.

Regular Salaries

Regular salaries were allocated to public service and technical processing functions on the basis of percentage estimates as outlined in Table VII. Public service salaries and benefits were allocated to user groups on the basis of recorded circulation as outlined in Table IV. Technical processing salaries and benefits were allocated by first subtracting the undergraduate portion as outlined in Table VII. The remainder was allocated to the graduate user and the faculty and staff user groups on the basis of population within each of the respective user groups.

Acquisition Division Salaries

Acquisition Division salaries were allocated by first subtracting the undergraduate portion (25 percent as outlined in Table VI) and then allocating the remainder to the graduate user and the faculty and staff user groups on the basis of population within each of the respective user groups.

Cataloging Division Salaries

Cataloging Division salaries were allocated by first subtracting the undergraduate portion (25 percent as outlined in Table VI) and then allocating the remainder to the graduate user and the faculty and staff user groups on the basis of population within each of the respective user groups.

Undergraduate Library Development

Undergraduate library development cost was allocated as a direct charge to the undergraduate user group.

Binding Salaries

Binding salaries were allocated according to the total percentage distribution of binding costs.

Library Administration

Library administration costs were allocated on the same basis as regular salaries.

Book Costs

For purposes of this allocation, it was first necessary to determine the cost of books purchased for the undergraduate user group. This was computed on the basis of information provided by the special study conducted in the Acquisition and Cataloging divisions. Specifically, there were 663 volumes purchased for the use of the undergraduate students during the four-week period studied. This number, 663, was multiplied by 13 (the number of four-week periods within a calendar year). The product, 8,619, was then multiplied by the average undergraduate book cost of $5.65 to arrive at a total undergraduate book cost of $48,697, or 30 percent of the total money expended for the purchase of books to be used by the University libraries.

This percentage then became the basis for determining the cost of books purchased for undergraduate use in the individual facilities. It was necessary, however, to look at each facility separately because of the population distribution variables which exist among the various

facilities. In other words undergraduate book costs could not be considered for facilities not used by undergraduate students.

Undergraduate book costs (where applicable) for a facility were then subtracted from the total book costs for that facility. The remainder was then allocated to the graduate user and the faculty and staff user groups on the basis of population within each facility for each of the respective user groups.

Periodical Costs

Periodical costs were allocated to appropriate user groups in much the same manner as book costs. However, the cost of periodicals to be purchased for undergraduate students was determined from a listing provided by the library office which provided the titles and costs of periodicals to be purchased for the new undergraduate library. These undergraduate costs were then related to the appropriate facilities.

Undergraduate periodical costs for a facility were then subtracted from the total periodical costs of that facility. The remainder was then allocated to the graduate user and the faculty and staff user groups on the basis of population within each facility for each of the respective user groups.

Binding Costs

Binding costs were also allocated to appropriate user groups in much the same manner as book costs. Undergraduate costs were developed by first assuming that periodicals purchased for the new undergraduate library would also bear a binding cost. Accordingly, the volume ratio of periodicals to be purchased for the new undergraduate library was related to the binding volume for each of the appropriate facilities, and the binding costs for the undergraduate user group was computed.

Undergraduate binding costs for a facility were then subtracted from the total binding costs of that facility. The remainder was then allocated to the graduate user and the faculty and staff user groups on the basis of population within each facility for each of the respective user groups.

Supply and Expense Costs

Supply and expense costs were allocated in the same manner as regular salaries.

Operating and Maintenance Costs

Operating and maintenance costs were first allocated to public service areas, technical processing areas and book storage areas in accordance with the percentage distribution outlined in Table VIII. Further allocation of the foregoing categories was made as follows:

1. Public service area costs were allocated to user groups on the basis of recorded circulation.

2. Technical processing area costs were allocated to user groups on the same basis as regular technical processing salaries and benefits.

3. Book storage area costs were allocated to user groups on the basis of combined book costs and periodical costs. For purposes of this allocation, book costs and periodical costs, already allocated to user groups, were combined into one total-per-user group. Using this combined total, a percentage distribution was computed for each user group within each facility. This percentage distribution was then used to allocate the cost of book storage areas to each of the respective user groups.

Building and Equipment Depreciation Costs

Building and equipment depreciation costs were allocated in the same manner as operating and maintenance costs.

University Administration Costs

Costs of University administration were allocated in the same manner as regular salaries.